

II. Obviousness Rejections over Watanabe and Nepela

The Examiner rejects claims 1-8 under 35 U.S.C. § 103(a) as being obvious over Watanabe and Nepela. For the following reasons, Applicant respectfully traverses this rejection.

With respect to independent claim 1, the Examiner alleges that Watanabe shows a device for enhancing contrast for a liquid crystal display projection system. The Examiner concedes that Watanabe does not explicitly teach a contrast control portion positioned on the same optical axis as that of the LCD panel, for controlling an amount of scanned light according to the brightness of a corresponding image. However, the Examiner alleges that Nepela teaches a variable contrast image projection wherein a contrast control portion (i.e., analyzer 26) positioned on the same optical axis as that of the LCD panel (i.e., image matrix 16), for controlling an amount of scanned light (see col. 6, lines 24-33). The Examiner alleges that it would have been obvious to one having ordinary skill in the art at the time of the invention to improve upon the display apparatus, as disclosed by Nepela, by combining Watanabe and Nepela. The Examiner asserts that doing so, i.e., combining Watanabe and Nepela, would provide a much better color contrast and uniform brightness would be achieved.

However, Applicant respectfully submits that the Examiner has not provided any support or explanation with respect to the reasons that a person of ordinary skill in the art would substitute Watanabe's teachings for controlling contrast with Nepela's teachings for controlling contrast, nor how Watanabe and Nepela may be combined. That is, Applicant submits that the Examiner has not explained how the combination of Watanabe and Nepela would result in Applicant's claimed combination.

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It is settled law that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). That is, although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” *See id.*

The factual inquiry whether to combine references must be thorough and searching, and must be based on objective evidence of record. *See In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See id.* Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *See In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

“This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority.” *See In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). Further, it is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher.” *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support his conclusion. *See In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

Applicant respectfully submits that the Examiner has not adequately addressed the issue of motivation to combine, and accordingly, has not set forth a *prima facie* case of obviousness.

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That is, Applicant submits that merely alleging that it would have been obvious to combine the references to improve the display apparatus and provide better color contrast, without more, is insufficient to establish, for the record, a motivation or suggestion for substituting the teachings of Watanabe with the teachings of Nepela in order to arrive at the claimed combination. Instead, the Examiner must provide a suggestion or motivation, either explicitly or inherently, in the prior art for combining or modifying the references, or for substituting the features of one reference for the features of another reference, to arrive at the claimed combination. Applicant respectfully submits that the Examiner has not satisfied this requirement in the present case.

For example, Watanabe discloses an electric aperture stop unit 111 having an aperture with a variable size that limits a bundle of rays to be incident on the projection optical system from the modulating device. In addition, Watanabe discloses a display controller 121 that determines an optical angle of collection by which the contrast is a maximum and designates this optimum angle of collection to the aperture stop driver 123. The aperture stop driver 123, in turn, drives the electric aperture stop 111 to have the optimum angle of collection.

On the other hand, Nepela teaches a system for controlling the contrast of projected images including a polarizer, phase plate, analyzer, and image matrix. The polarizer, phase plate, and analyzer are adjustable to vary the contrast of the projected image through partial or complete extinction, by destructive interference, only of light passing to the projected image from the unexposed portions of a film (see Abstract; see also col. 6, lines 25-53).

Applicant submits that Watanabe and Nepela disclose completely different approaches to improving the contrast of the image. However, the Examiner has not provided a motivation or

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suggestion for substituting the teachings of Nepela for the teachings of Watanabe. That is, the Examiner has not cited, nor do the cited references teach or suggest, either explicitly or implicitly, the manner in which the Watanabe and Nepela references would be combinable to improve the contrast of the image. At least in this respect, Applicant respectfully submits that the Examiner's assertion that it would have been obvious to combine the references to improve the display apparatus and provide better color contrast does not satisfy the requirements for establishing a *prima facie* case of obviousness, with respect to independent claim 1 (and dependent claims 2-8).

However, assuming *arguendo*, that Watanabe and Nepela could somehow have been combined, or that a person of ordinary skill in the art would have been motivated to combine the cited references, Applicant submits that the combination of cited references still does not result in Applicant's claimed combination. For example, Applicant submits that neither Watanabe or Nepela discloses, teaches, or suggests a contrast controller that applies a contrast control signal that is inversely proportional to the ABL control signal supplied from the image driver, as recited in claim 4. That is, neither Watanabe nor Nepela discloses, or even mentions, anywhere in their respective disclosures, an ABL control signal supplied from the image driver. Further, the cited references are completely silent on how the contrast controller applies the contrast control signal. To this end, neither of the cited references teaches or suggests that the contrast control signal is inversely proportional to the ABL signal, as recited in claim 4. Therefore, Applicant submits that, assuming *arguendo*, Watanabe and Nepela could somehow

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have been combined, at least claim 4 is not obvious over Watanabe and Nepela, either alone or in combination, and accordingly, the rejection of at least claim 4 should be withdrawn.

Similarly, assuming *arguendo*, that Watanabe and Nepela could somehow have been combined, or a that a person of ordinary skill in the art would have been motivated to combine the cited references, Applicant submits that the combination of the cited references does not teach or suggest all of the recitations of at least claim 5. For example, the Examiner is relying on Nepela for the teaching of a contrast control portion (see Office Action, page 2, paragraph 2). However, Nepela does not disclose, teach, or suggest using an LCD as a contrast control plate. Therefore, Applicant submits that neither Watanabe nor Nepela, either alone or in combination, discloses, teaches, or suggests using an LCD as a contrast control plate, as recited in claim 5. Thus, assuming *arguendo*, Watanabe and Nepela could somehow have been combined, claim 5 would not have been obvious over any combination of the cited references, and accordingly, the rejection of claim 5 should be withdrawn.

Further, with respect to claim 6, Applicant submits that claim 6 is patentable over the combination of the cited references at least by virtue of its dependency on claim 5. Additionally, Applicant submits that claim 6 is separately patentable over the combination of the cited references at least by virtue of the additional features recited therein.

With respect to claim 7, Applicant submits that, as set forth above with respect to claim 4, both Watanabe and Nepela are completely silent with respect to how the alleged contrast controller applies a contrast control signal for controlling the alleged contrast control plate. Therefore, Applicant submits that the cited references, do not, and cannot, disclose, teach, or

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suggest all of the features of claim 7. That is, the cited references, neither alone nor in combination, disclose, teach, or suggest a contrast controller that applies a contrast control signal for controlling the contrast control plate to be closed in correspondence to a difference value if the average level of the image signal is lower than the reference level, or controlling said contrast control plate to be opened in correspondence to a difference value if the average level of the image signal is higher than the reference level. Accordingly, Applicant submits that claim 7 is patentable over any combination of the cited references, and therefore, the rejection of claim 7 should be withdrawn.

With respect to claim 8, the Examiner concedes that Watanabe does not teach a contrast control portion disposed on an optical path between the LCD panel and a polarizing plate. However, the Examiner alleges that this feature is “very obvious” (see Office Action, page 3, numbered paragraph 2). In particular, the Examiner alleges that it would have been obvious to one having ordinary skill in the art to use a contrast control portion disposed on an optical path between the LCD panel and a polarizing plate. The Examiner supports this position, by alleging, without more, that by doing so, the contrast through a wide range of application can be efficiently and quickly controlled. As with claim 1 above, Applicant respectfully submits that the Examiner has not adequately addressed the issue of motivation to combine, and accordingly, has not set forth a *prima facie* case of obviousness. That is, the Examiner has not provided any support for, or explanation with respect to, the manner in which the contrast through a wide range of application could be efficiently and quickly controlled. Furthermore, the Examiner has

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not cited for the record any teaching or suggestion, either explicitly or implicitly, in the prior art that would teach or suggest this combination.

III. Obviousness Rejections over Watanabe, Nepela, and Tokui

The Examiner rejects claims 2-8 under 35 U.S.C. § 103(a) as being unpatentable over Watanabe, Nepela, and Tokui.

With respect to claims 2 and 3, Applicant submits that, for reasons analogous to the reasons set forth with respect to claim 1, the Examiner has not established a *prima facie* case of obviousness for combining or modifying Watanabe, Nepela, and Tokui.

With respect to claims 4 and 5, the Examiner concedes that Watanabe does not teach a contrast controller which is inversely proportional to the ABL control signal supplied from the image driver, and wherein the contrast control plate is an LCD. However, the Examiner alleges that “this is very obvious” (see Office Action, page 4, numbered paragraph 4). In particular, the Examiner alleges, without more, that the motivation for providing these claimed features would have been merely a desire to provide a display with a much better brightness.

To reiterate, it is settled law that the factual inquiry regarding the combination of references must be thorough and searching, and must be based on objective evidence of record. See *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. See *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). “This factual question of motivation is material

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to patentability, and could not be resolved on subjective belief and unknown authority.” See *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002). Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support his conclusion. See *In re Lee*, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

Applicant respectfully submits that the Examiner has not adequately addressed the issue of motivation to combine, and accordingly, has failed to set forth a *prima facie* case of obviousness. That is, Applicant submits that merely alleging that these features are “very obvious”, without citing a reference that discloses or suggests these features, is insufficient to satisfy a *prima facie* case of obviousness. Moreover, merely alleging, without more, that the motivation for providing these claimed features would have been a desire to provide a display with a much better brightness, is insufficient to establish, for the record, a motivation or suggestion for modifying Watanabe, Nepela, and Tokui in order to arrive at the claimed combination. Therefore, Applicant respectfully submits that the rejection of claims 4 and 5 is improper, and therefore, should be withdrawn.

With respect to claim 6, the Examiner alleges that Watanabe discloses (at col. 3, lines 19-41) the features of claim 6. Applicant disagrees. Claim 6 recites, *inter alia*, a contrast control plate that controls “the degree of the opening and closing cells constituting the LCD according to the contrast control signal applied from said contrast controller.” Applicant submits that, assuming *arguendo*, Watanabe, Nepela, and Tokui could somehow have been combined, or a that a person of ordinary skill in the art would have been motivated to combine the cited

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references, neither Watanabe, Nepela, nor Tokui discloses, teaches, or suggests at least using an LCD as a contrast control plate.

For example, Watanabe discloses a modulating device 108. Applicant submits that the modulating device 108 of Watanabe (at best) corresponds to the LCD panel, recited in claim 1. However, claim 6 further recites a contrast control plate, which is also an LCD, as recited in claim 5. Therefore, Applicant submits that the LCD of claim 6, which is controlled by the contrast control plate, is referring to the LCD recited in claim 5, from which claim 6 depends, not the LCD panel recited in claim 1. Thus, since Watanabe teaches only a single LCD, Watanabe does not, and cannot, disclose, teach, or suggest controlling the cells of the LCD according to the contrast control signal applied from the contrast controller, as recited in claim 6. Accordingly, the rejection of claim 6 should be withdrawn.

With respect to claim 7, the Examiner asserts that Nepela discloses (at col. 1, lines 25-66) a contrast controller that “applies the contrast control signal for controlling said contrast control plate to be closed in correspondence to a difference value if the average level of the image signal is lower than the reference level, or controlling said contrast control plate to be opened in correspondence to a difference value if the average level of the image signal is higher than the reference level,” as recited in claim 7. Applicant respectfully disagrees.

That is, Applicant submits that Watanabe does not disclose, teach, or suggest a difference value based on whether the average level of the image signal is lower or higher than a reference level, as recited in claim 7. Instead, Watanabe merely discloses providing a projected image of variable contrast by at least partially extinguishing (through birefringence-related destructive

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interference) the light that is passing to the projected image from the unexposed, less light absorptive, more birefringent matrix portions while leaving the light that is passing to the projected image from the exposed, relatively highly light absorptive, less birefringent matrix portions substantially unaffected (see col. 1, lines 50-59). Thus, claim 7 is patentable over the cited references and this rejection should be withdrawn.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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